

MS APPEAL BRIEF - PATENTS
Docket No.: 3430-0154P
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Sung-Kon KIM

Application No.: 09/741,045

Confirmation No.: 5517

Filed: December 21, 2000

Art Unit: 2871

For: BACK LIGHT DEVICE AND LIQUID
CRYSTAL DISPLAY DEVICE HAVING THE
SAME

Examiner: T. V. Duong

APPEAL BRIEF TRANSMITTAL FORM

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is an Appeal Brief on behalf of the Appellants in connection with the above-identified application.

☐ The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. § 1.8.

A Notice of Appeal was filed on September 28, 2005. A Notice of Panel Decision was subsequently received on December 14, 2005.

☐ Applicant claims small entity status in accordance with 37 C.F.R. § 1.27.

The fee has been calculated as shown below:

☒ Extension of time fee pursuant to 37 C.F.R. §§ 1.17 and 1.136(a) - \$120.00.

Application No.: 09/741,045

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☒ Fee for filing an Appeal Brief - \$500.00 (large entity).

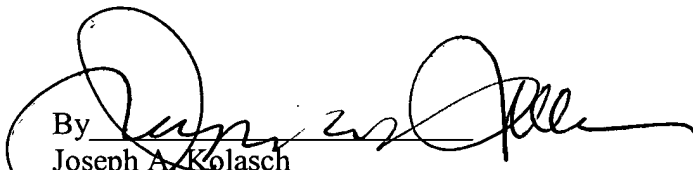
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☐ Please charge Deposit Account No. 02-2448 in the amount of \$620.00. A triplicate copy of this sheet is attached.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: January 17, 2006
(Tuesday after Holiday)

Respectfully submitted,



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PATENT
3430-0154P

IN THE U.S. PATENT AND TRADEMARK OFFICE

In Re Application of

Before the Board of Appeals

Sung-Kon KIM

Appeal No.

Appl. No.: 09/741,045

Group: 2871

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For: BACK LIGHT DEVICE AND LIQUID CRYSTAL DISPLAY HAVING
THE SAME

APPEAL BRIEF ON BEHALF OF APPELLANT UNDER
37 C.F.R. §41.37



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37 C.F.R. §41.37

MS APPEAL BRIEF- PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

January 17, 2006
(Tuesday After Holiday)

Dear Sir:

This is an Appeal from the Rejection of June 28, 2005 of claims 1-20 in
the above-identified application.

Appeal Brief filed January 17, 2006

Appl. No.: 09/741,045
Group: 2871

I. REAL PARTY IN INTEREST

As evidenced by the Assignment filed June 13, 2001, and recorded at Reel 011894, Frames 0227-0229 the Real Party In Interest in connection with the present application is the Assignee of record, LG. PHILIPS LCD CO. LTD., 20 Yoido-dong, Youngdungpo-gu, Seoul, Republic of Korea.

Appeal Brief filed January 17, 2006

Appl. No.: 09/741,045
Group: 2871

II. RELATED APPEALS AND INTERFERENCES

There are no pending Appeals or Interferences related to the present application known to the Appellant or the Appellant's Legal Representatives.

Appeal Brief filed January 17, 2006

Appl. No.: 09/741,045
Group: 2871

III. STATUS OF CLAIMS

Claims 1-20 are pending in the application. Claims 1-20 stand rejected.

IV. STATUS OF AMENDMENTS

An Amendment Under 37 C.F.R. § 1.111 was filed on September 9, 2002. A Reply Under 37 C.F.R. § 1.116 was filed on February 19, 2003, which was entered by the Advisory Action mailed March 10, 2003. An Appeal Brief was filed on May 19, 2003. Following reopening of prosecution by the Office Action of July 31, 2003, a Response presenting no claim amendments was filed on October 31, 2003. A Reply after final rejection was filed on May 26, 2004, in response to the Office Action mailed February 26, 2004. On October 26, 2004, a Request for Continued Examination was filed accompanied by a Preliminary Amendment containing an amended claim set. In response to the non-final Office Action mailed January 7, 2005, an Amendment containing an amended claim set was filed on April 7, 2005. On June 28, 2005, the Examiner issued a final Office Action. A Notice of Appeal and Request for Pre-Appeal Brief Conference was filed on September 28, 2005. A Notice of Panel Decision was mailed on December 14, 2005, which stated to proceed to the Board of Patent Appeals and Interferences.

Accordingly, all amendments presented by the Appellant have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention pertains to a display having a novel backlight configuration that prevents a bright line, thereby improving brightness (page 8, lines 18-20). The invention has at least one lamp and a light guide plate (page 6, lines 11-13), which can have a dot pattern (page 6, line 16) that guides light emitted from the lamp. A diffusing sheet diffuses light emitted from the light guide plate, and at least one prism sheet located on the diffusing sheet concentrates light (page 6, line 18). A protecting sheet is located on the prism sheet (page 6, line 19). A reflector is located under the light guide plate so as to reflect light directing downward the light guide plate (page 6, lines 19-20). The invention utilizes a printing portion made of colorless ink containing a light scattering agent (page 6, lines 21-22), which can be found on an edge portion of the diffusing sheet adjacent to the lamp (page 7, lines 14-15), an edge portion of the protecting sheet adjacent to the lamp (page 8, lines 9-10), or on the reflector (page 6, line 20). This novel configuration prevents a bright line from forming and thus improves brightness (Page 8, lines 18-20).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The first issue presented for review is whether Nagakubo (U.S. Patent No. 6,219,117) anticipates each and every element of claims 1-5, 7, 9 and 10 sufficient to support a rejection under 35 U.S.C. § 102(e).

The second issue presented for review is whether the combination of Nagakubo and Mashino (U.S. Patent No. 5,886,789) suggests all the elements of claims 6 and 8 to support an obviousness rejection under 35 U.S.C. § 103(a).

The third issue presented for review is whether the combination of Suga (U.S. Patent 6,425,673) and Nagakubo suggests all the elements of claims 11-20 to support an obviousness rejection under 35 U.S.C. § 103(a).

VII. ARGUMENT

VII-A. The Present Invention and its Advantages

The present invention pertains to a back light for a liquid crystal display device that utilizes a novel reflector that includes colorless ink containing a light scattering agent. Independent claims 1 and 11 of the invention recite an optical component that “includes a printing portion made of colorless ink containing a light scattering agent.”

Similarly, independent claims 3 and 12 contain the limitation: “a printing portion made of colorless ink containing a light scattering agent.”

That is, independent claims 1, 3, 11 and 12 of the invention recite “colorless ink containing a light scattering agent.”

The technology of the invention can be better understood by considering the embodiment shown in Figure 7 of the application, which is reproduced below.

Fig.7

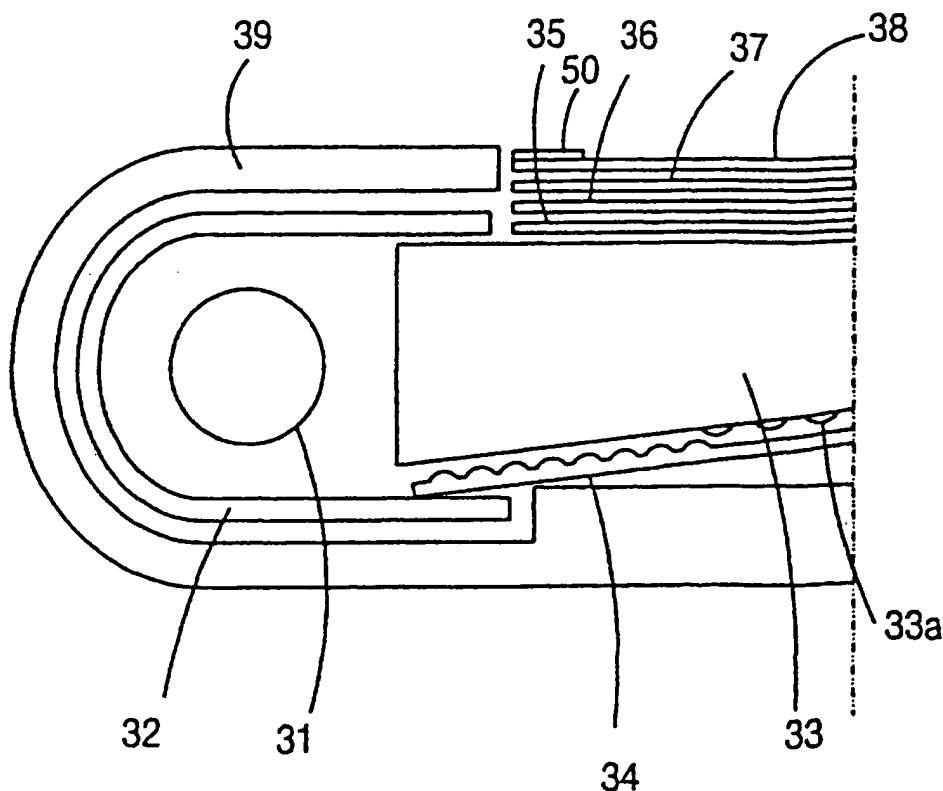


Figure 7 shows a light guide plate 33 over which several sheets are stacked, including a diffusing sheet 35, two prism sheets 36 and 37, and a protecting sheet 38. It is the protecting sheet 38 that has that the printing portion 50 that is made of colorless ink into which a light scattering agent is interspersed. Alternately, Figure 6 shows the printing portion 50 being located on the diffusing sheet 35.

In Figure 7, the opposite side of the light guide plate 33 has a surface on which the patterns 33a are found. The patterns, which can be dots, may be

formed by printing, v-cut, molding, etc. Also, a reflector 34 has crenellations corresponding to the area of the light guide plate that is free from patterns. The entire construction thus interacts to produce a uniform light distribution having no bright line phenomena.

That is, in the invention, the printing portion (made of colorless ink containing light scattering material) and the dot pattern are two fundamentally different structures that can be located at different locations on opposite sides of the light guide plate 33.

VII-B. Distinctions of the Invention Over Nagakubo

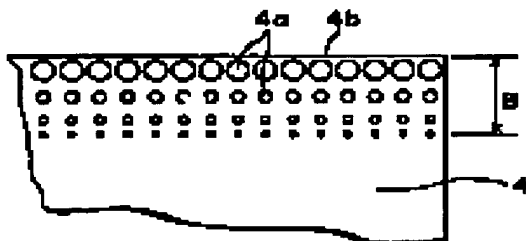
When alleging anticipation under 35 U.S.C. §102, the entire claim must be considered. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the . . . claim.” Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). “[A]ll the claim limitations must be taught or suggested by the prior art.” In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). “All the words of a claim must be considered in judging the patentability of that claim against the prior art.” In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA

1970).

Appellant submits that Nagakubo fails to anticipate each and every element of claims 1-5, 7, 9 and 10.

Nagakubo pertains to a liquid crystal display device. Figure 1 of Nagakubo shows a liquid crystal display device having a protection/diffusion sheet disposed on a liquid crystal panel 1, lens sheets 3, a diffusion plate 4, a light transmission member 5 and a reflection sheet 6. Fig 3 of Nagakubo, reproduced below, shows the diffusion plate 4 having a light quantity control portion 4a on the end side 4b.

FIG. 3



Nagakubo utterly fails to disclose or suggest "a printing portion made of colorless ink containing a light scattering agent." See claims 1 and 3 of the

invention. The Examiner, however, asserts that Nagakubo at column 7, lines 22-47, anticipates this limitation.

Nagakubo at column 7, lines 22-34, does have the following disclosure:

As shown in FIG. 3, since the diffusion plate 4 has the light quantity control portion 4a formed on the one surface thereof which is not subjected to the glaring prevention on the end 4b side located near to the backlight source 8, the light quantity control portion 4a being formed by print or the like to a dot pattern which is ***composed of a white material having a light transmitting property to a certain extent***, a part of the light from the backlight source 8 passes through the light quantity control portion 4a and emerges to the lens sheets 3 on the light quantity control portion 4a and the remaining light reflects at the light quantity control portion 4a and makes irregular reflection in the light transmission member 5. (emphasis added)

Nagakubo, that is, discloses a translucent white material that can transmit light to a certain extent. This technology is fundamentally different from claims 1 and 3 of the invention's "printing portion made of colorless ink containing a light scattering agent."

Typically, the Examiner asserts at page 3, lines 16-18 of the Office Action mailed July 31, 2003 that Nagakubo discloses "an edge portion of the diffusing sheet adjacent to the lamp includes a printing portion 4a made of ***colorless ink (white material)*** containing a light scattering agent (col. 7, lines 22-47)." (Emphasis added) By this, the Examiner equates the fundamentally different concepts of "white" and "colorless."

Webster's II New Riverside University Dictionary (1984 by Houghten Mifflin Co.) defines "white," in part, as "An achromatic **color** of maximum lightness, the complement of antagonist of black, the other extreme of the neutral gray series." Also, "whiter" and "whitest" are defined as "of the **color** white" or "approaching the **color** white." (emphases added).

Therefore, a "colorless ink" is not the same as a "white material," as has been posited by the Examiner. Nagakubo, as a result, fails to anticipate or suggest the invention as set forth in independent claims 1 and 3. Claims dependent upon claims 1 and 3 are patentable for at least the above reasons.

However, at page 7, lines 1-12 of the Office Action mailed January 7, 2005, the Examiner maintains his position:

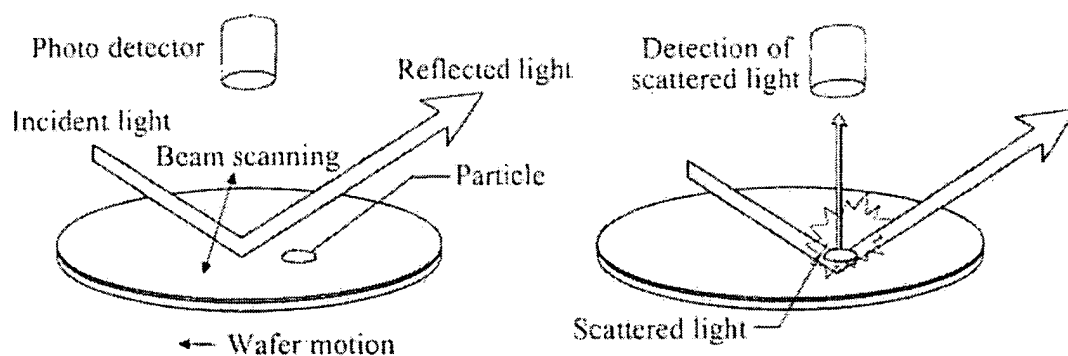
Re claims 1 and 3, Applicant argued that Nagakubo utterly fails to disclose or suggest "a printing portion made of colorless ink containing a light scattering agent." That is, Nagakubo discloses a translucent white material can transmit light to a certain extent. The Examiner disagrees with the Applicant's remarks because, as a part of the diffusing sheet 4, the printing portion 4a is made of a white material which not only transmits a part of light from the backlight source but also makes irregular reflection the remaining light from the backlight source in the light guide plate (column 7, lines 22-35). Accordingly, the printing portion 4a also has a scattering function. Moreover, according to Merriam Webster's Collegiate Dictionary, Tenth Edition, "white" is defined as "free from color" (page 1348) and "colorless" is defined as "lacking color" (page 227). Therefore, a "colorless ink" is the same as an "ink having a white material." Thus, Nagakubo anticipates the invention as set forth in claims 1 and 3.

At pages 6 and 7 of the penultimate Office Action mailed June 28, 2005,

the Examiner continued to maintain his position using virtually identical language.

Despite the Examiner's assertions, the reflection property described in Nagakubo is fundamentally different than the light scattering material of the invention.

The difference between reflection and light scattering is well known to those having skill in the art. This difference is illustrated, for example, in Figure 7.18 at page 164 of Semiconductor Manufacturing Technology, by M. Querk and J. Serda (Prentice hall, 2001), which is reproduced below.



As shown in the above figure, light scattering is a phenomenon that is not identical to either incident or reflected light. The intensity of light scattering is instead measure at an angle θ from the beam. The intensity of the light scattering depends on the nature of the reflective surface or the concentration of particulates in the light beam. Light scattering is light diffusion that has been typically described, for example by the Broersma equation $D = (kt/6\pi nb')G(\rho)$ (S. Broersma, Rotational diffusion constant of a

cylindrical particle., J. Chem. Phys., 32: 1626-1635, 1960).

The "irregular reflection" of the "white material" of Nagakubo therefore fails to disclose or suggest the light scattering caused by the "light scattering material" of the invention. As a result Nagakubo fails to anticipate the invention of claims 1 or 3. Claims depending upon claims 1 and 3 are patentable for at least the above reasons.

VII-C. Distinctions Of The Invention Over Nagakubo And Mashino

When a rejection is based on 35 USC §103, what is in issue in such a rejection is "the invention as a whole," not just a few features of the claimed invention. Under 35 U.S.C. §103, "[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination under §103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. See In re O'Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. See Medtronic, Inc. v. Cardiac Pacemakers, Inc., 721 F.2d 1563, 1567, 220 USPQ 97, 101 (Fed. Cir. 1983).

In rejecting claims under 35 USC 103, it is incumbent on the examiner

to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reasoning must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992).

Further, the rigorous burden placed upon the Examiner for establishing

prima facie obviousness has been emphasized by the United States Court of Appeals for the Federal Circuit in In re Sang Su Lee, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002). In Sang Su Lee, the court states:

As applied to the determination of patentability *vel non* when the issue is obviousness, "it is fundamental that rejections under 35 U.S.C. §103 must be based on evidence comprehended by the language of that section." In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983). The essential factual evidence on the issue of obviousness is set forth in Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966) and extensive ensuing precedent. The patent examination process centers on prior art and the analysis thereof. When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. *See, e.g., McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," a question of fact drawing on the Graham factors).

The need for specificity pervades this authority. *See, e.g., In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); In re Rouffet, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have

been motivated to select the references and to combine them to render the claimed invention obvious."); In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references"). In re Sang Su Lee at 277 F.3d 1342.

Nagakubo has been discussed above. Nagakubo fails to disclose or suggest claims 1 and 3 (and 11 and 12) of the invention's "printing portion made of colorless ink containing a light scattering agent."

The Examiner admits that Nagakubo fails to disclose a light guide plate having a plurality of dot patterns. The Examiner turns to Mashino for teachings pertaining to a light guide plate having a multiplicity of light diffusion dots (*see, e.g.,* page 4, lines 3-17 of the Office Action mailed June 28, 2005).

Mashino, however, fails to address the deficiencies of Nagakubo in disclosing or suggesting "a printing portion made of colorless ink containing a light scattering agent." The combination of Mashino with Nagakubo, as a result, would fail to motivate a person having ordinary skill to produce the invention as embodied in claim 6 or claim 8. A *prima facie* case of obviousness has thus not been made over the combination of Nagakubo in view of Mashino.

VII-D. Distinctions Of The Invention Over Suga And Nagakubo

Suga pertains to a light guide pipe having elongate roughened protrusions and/or roughened concaves. Suga fails to disclose or suggest a printing portion formed from a colorless ink in which light scattering material has been interspersed.

At pages 4 and 5 of the Office Action mailed June 28, 2005, the Examiner turns to Figure 2 of Suga, which shows a lamp, a light guide plate 2, a diffusing sheet 13, a prism sheet 12 and a reflector 14.

The Examiner then turns to Figure 6B of Suga, which is reproduced below.

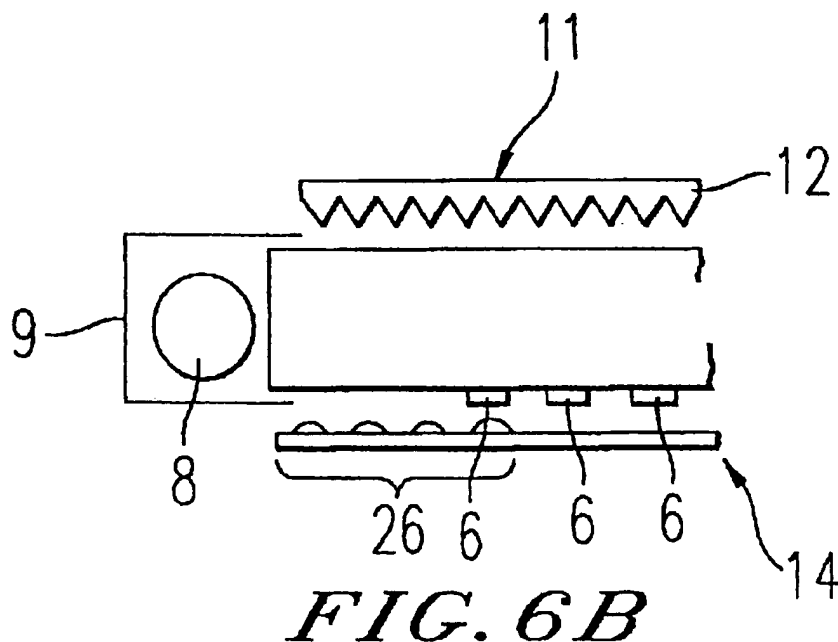


Figure 6B of Suga shows a reflector 14 having a diffusion reflective pattern of white ink in a close area 26 (Suga at column 13, lines 9-24). Element 6 is surface roughened protrusions, i.e., net dots (Suga at column 6, lines 65-66). This construction of Suga may be comparable to the crenellated reflector 34 and the light guide patterns 33a of the invention.

At page 5, lines 18-20 of the Office Action of June 28, 2005, the Examiner alleges that the white ink of Suga is comparable to the colorless ink of the invention. However, this structure of Suga has a fundamentally function (light control) and location (under the light guide) than that found in the invention. Also, as discussed above, a white ink is different and cannot be compared to a colorless ink. As a result, Suga utterly fails to disclose or suggest a printing portion formed from a colorless ink containing light scattering material, such as is claimed in the independent claims of the invention.

The Examiner then turns to Figure 1 of Nagakubo for teachings pertaining to a protecting sheet and a prism sheet. However, these teachings of Nagakubo fail to address the inability of Suga to teach or suggest a claimed embodiment of the invention where a printing portion is formed from a colorless ink containing light scattering material.

As a result, one having ordinary skill in the art would not be motivated by the combination of Suga and Nagakubo to produce the invention of independent claims 11 and 12. A *prima facie* case of obviousness has thus not

been made. Claims depending on claims 11 and 12 are patentable for at least the above reasons.

VII-E. Summary

The inventive back light device uses printing portion made of colorless ink containing a light scattering agent in a truly novel fashion. As has been shown, the Examiner has failed to establish that Nagakubo anticipates the invention. The Examiner has additionally failed to establish a *prima facie* case of obviousness over either the combination of Nagakubo with Mashino or the combination of Suga with Nagakubo.

Accordingly, reversal of the Examiner's rejection of claims 1-20 based on the above arguments is respectfully requested.

CONCLUSION

The Appellant has demonstrated that the Examiner has failed to successfully allege that the rejected claims are anticipated or *prima facie* obvious. It is clear that the inventive liquid crystal display device represents a truly inventive display technology. For the reasons advanced above, it is respectfully submitted that all claims in this application are allowable. Thus, favorable reconsideration and reversal of the Examiner's rejections of claims 1-20 under 35 U.S.C. §§ 102(e) and 103(a), by the Honorable Board of Patent Appeals and

Appeal Brief filed January 17, 2006

Appl. No.: 09/741,045
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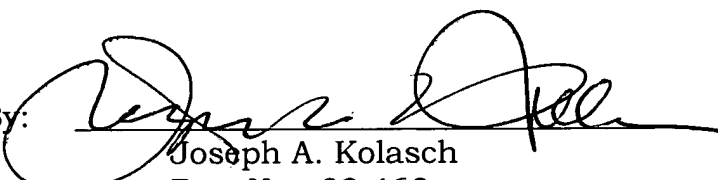
Interferences, are respectfully solicited.

The required Appeal Brief fee in the amount of \$500.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fee required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachments: VIII CLAIMS APPENDIX
IX EVIDENCE APPENDIX
X RELATED PROCEEDINGS APPENDIX

VIII

CLAIMS APPENDIX

1. (Previously Presented) A back light device for use in a liquid crystal display device, comprising:

at least one lamp;

a light guide plate for guiding light emitting from the lamp;

a diffusing sheet for diffusing light emitting from the light guide plate;

at least one prism sheet located on the diffusing sheet, concentrating light;

a protecting sheet located on the prism sheet;

a reflector located under the light guide plate, reflecting light directing downward the light guide plate,

wherein at least one of an edge portion of the diffusing sheet adjacent to the lamp, an edge portion of the protecting sheet adjacent to the lamp, or the reflector includes a printing portion made of colorless ink containing a light scattering agent.

2. (Previously Presented) The back light device of claim 1, wherein there are two lamps.

3. (Previously Presented) A liquid crystal display device, comprising:

a liquid crystal panel including two substrates with a liquid crystal layer interposed therebetween;

a back light device including:

- a) at least one lamp;
- b) a light guide plate for guiding light emitting from the lamp;
- c) a diffusing sheet for diffusing light emitting from the light guide plate;
- d) at least one prism sheet located on the diffusing sheet, concentrating light;
- e) a protecting sheet located on the prism sheet;
- f) a reflector located under the light guide plate, reflecting light directing downward the light guide plate,

wherein at least one of an edge portion of the diffusing sheet adjacent to the lamp, an edge portion of the protecting sheet adjacent to the lamp, or the reflector includes a printing portion made of colorless ink containing a light scattering agent.

4. (Previously Presented) The display device of claim 3, wherein there are two lamps.

5. (Previously Presented) The back light device of claim 1, wherein the

light guide plate has a plurality of patterns.

6. (Previously Presented) The back light device of claim 5, wherein the patterns are dots.

7. (Previously Presented) The display device of claim 3, wherein the light guide plate has a plurality of patterns.

8. (Previously Presented) The display device of claim 7, wherein the patterns are dots.

9. (Previously Presented) The back light device of claim 1, wherein light reflected from a bottom surface of the device causes constructive interference with light emitting from the lamp, whereby a bright line is prevented.

10. (Previously Presented) The display device of claim 3, wherein light reflected from a bottom of the display device causes constructive interference with light emitted from the lamp, thereby preventing a bright line.

11. (Previously Presented) A back light device for use in a liquid crystal display device, comprising:

- at least one lamp;
- a light guide plate for guiding light emitting from the lamp;
- a diffusing sheet for diffusing light emitting from the light guide plate;
- at least one prism sheet located on the diffusing sheet, concentrating light;
- a protecting sheet located on the prism sheet;
- a reflector located under the light guide plate, reflecting light directing downward the light guide plate,

wherein at least one of an edge portion of the protecting sheet adjacent to the lamp or the reflector includes a printing portion made of colorless ink containing a light scattering agent.

12. (Previously Presented) A liquid crystal display device, comprising:

- a liquid crystal panel including two substrates with a liquid crystal layer interposed therebetween;
- a back light device including:
 - a) at least one lamp;
 - b) a light guide plate for guiding light emitting from the lamp;
 - c) a diffusing sheet for diffusing light emitting from the light guide plate;
 - d) at least one prism sheet located on the diffusing sheet, concentrating light;

e) a protecting sheet located on the prism sheet;

f) a reflector located under the light guide plate, reflecting light directing downward the light guide plate,

wherein at least one of an edge portion of the protecting sheet adjacent to the lamp or the reflector includes a printing portion made of colorless ink containing a light scattering agent.

13. (Previously Presented) The back light device of claim 11, wherein there are two lamps.

14. (Previously Presented) The back light device of claim 12, wherein there are two lamps.

15. (Previously Presented) The back light device of claim 11, wherein the light guide plate has a plurality of patterns.

16. (Previously Presented) The back light device of claim 15, wherein the patterns are dots.

17. (Previously Presented) The display device of claim 12, wherein the light guide plate has a plurality of patterns.

18. (Previously Presented) The display device of claim 17, wherein the patterns are dots.

19. (Previously Presented) The back light device of claim 11, wherein light reflected from a bottom surface of the device causes constructive interference with light emitting from the lamp, whereby a bright line is prevented.

20. (Previously Presented) The display device of claim 12, wherein light reflected from a bottom of the display device causes constructive interference with light emitted from the lamp, thereby preventing a bright line.

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IX

EVIDENCE APPENDIX

(Not Applicable)

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RELATED PROCEEDINGS APPENDIX

(Not Applicable)